BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs Pursuant to Public Utilities Code Section 2827.1, and to Address Other Issues Related to Net Energy Metering.	RULEMAKING 14-07-002 (Filed July 10, 2014)
And Related Matter.	Application 16-07-015

Petition of Center for Sustainable Energy® for Modification of Decision 17-12-022 to Address the Methodology for Calculating an Annual Step-down in Incentives for the Solar On Multifamily Affordable Housing Program

Center for Sustainable Energy®

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Table of Contents

I. INTRODUCTION

In accordance with Rule 16.4 of the California Public Utilities Commission (CPUC or Commission) Rules of Practice and Procedure, the Center for Sustainable Energy® (CSE), as a member of the Solar On Multifamily Affordable Housing (SOMAH) Program Administrator (PA) Team, respectfully submits this Petition for Modification of Decision (D.)17-12-022 to modify the methodology for calculating an annual step-down in incentives for the SOMAH Program (Petition for Modification). More specifically, and as discussed in greater detail below, CSE seeks modification of the aforementioned Decision to obtain authorization from the Commission to eliminate the current annual incentive step-down methodology and establish a differentiated incentive structure that provides higher incentives for eligible properties located in disadvantaged communities (DACs). This change will allow for sufficient incentive levels to ensure sustained program participation, thereby enabling the program to meet its overall target of installing at least 300 megawatts (MW) of generating capacity on qualified properties by 2030, while also supporting the programmatic benchmark of 40% of capacity installed in DACs. Additionally, CSE requests that the Commission authorize the SOMAH PA to propose future modifications to incentive levels as necessary and with consultation with Energy Division via Tier 2 Advice Letter, which will ensure the SOMAH Program can adapt to evolving market conditions in a timely and efficient manner, while retaining means for critically important party comments through the regulatory process and stakeholder engagement activities.

II. REQUEST FOR LEAVE UNDER RULE 16.4(D)

CSE respectfully requests leave under Rule 16.4(d) of the CPUC Rules of Practice and Procedure to file this Petition for Modification more than one year following the effective date of D.17-12-022. D.17-12-022 established the SOMAH Program in 2017, adopting a methodology whereby incentive levels decrease by the annual percent decline in residential

solar costs as reflected by NREL reports, or 5% annually, whichever is less.[1] The Commission noted that this incentive step-down methodology would be reviewed and may be changed in the 2020 program evaluation, if appropriate, based on further cost or market information.[2]

The SOMAH Program officially launched on July 1, 2019, and the initial 2020 SOMAH Program evaluation was conducted in two parts, with the final Phase I Report submitted on August 4, 2020, and the final Phase II Report submitted on October 13, 2021. Accordingly, the impacts of the calculation method for annual step-downs in incentives for the SOMAH Program, and specifically whether the methodology continues to ensure that annual incentive reductions reflect changes to actual market costs, were unknown until completion of the final Phase II Report in October 2021. Moreover, the SOMAH Phase II Report included key findings that support the need for the modifications requested via this Petition for Modification:

- "Program interest started strong but has declined after satisfying pent-up demand."[3]
- "The SOMAH Program is not a market transformation program"; thus, incentive step-downs that are typically employed in a market transformation framework may not be appropriate.[4]
- "Future SOMAH projects [are] likely to increase in cost."[5]

Beginning in the fall of 2021, the SOMAH PA conducted a series of interviews and focus groups with property owners and contractors to better understand barriers to participation in

[1] D.17-12-022, *Decision Adopting Implementation Framework for Assembly Bill 693 and Creating the Solar On Multifamily Affordable Housing Program*, December 14, 2017, page 43.

[2] D.17-12-022 at 43.

[3] *Solar On Multifamily Affordable Housing Phase II Report* (SOMAH Phase II Report), September 2, 2021, page 126, *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/somah/somah_phaseii_draftreport_20210902.pdf

[4] *Id.* at 127.

[5] *Id.* at 95.

the program. The results of this research broadly support the findings in the Phase II Report, with several contractors stating that current incentive levels are not adequate to support recently submitted projects in the face of supply chain constraints and record inflation. Indeed, the Program has only received two reservation requests[6] in 2022, despite market assessments that suggest there are thousands more potentially eligible properties statewide serving hundreds of thousands of low-income tenants, including in DACs, who could benefit from on-bill virtual net energy metering (VNEM) credits through their properties' participation.

Additionally, following program launch, the SOMAH PA has worked with the SOMAH Advisory Council and CPUC staff to define program goals for participation by eligible properties located in DACs. In November 2020, the SOMAH PA issued a Memorandum on Increasing DAC Participation[7] that described strategies for increasing participation by eligible properties located in DACs. These strategies included establishing a programmatic benchmark for DAC participation across IOU territories, as well as setting a higher incentive structure for properties in DACs. A target of 40% of all participating SOMAH projects located in DACs was established in the 5th Edition of the SOMAH Program Handbook.[8]

Given these findings from the program evaluation, the results of additional research obtained in late 2021, and program goals for DAC participation established in the 5th Edition of the SOMAH Program Handbook, effective April 28, 2022, the SOMAH PA now finds that the current incentive levels and the method for the annual incentive step-down no longer reflect changes to actual market costs for solar installations on multifamily affordable housing,

[6] The SOMAH Program has received six (6) new Track A requests for upfront technical assistance; however, these requests represent general interest in the program and are not necessarily an indication that incentive levels are adequate to result in viable projects.

[7] Memorandum: Increasing DAC Participation, *available at* https://calsomah.org/sites/default/files/docs/Disadvantaged-Communities-Memo.pdf

[8] *SOMAH Program Handbook, Fifth Edition*, pg. 13, *available at* https://calsomah.org/sites/default/files/docs/SOMAH-Handbook_FifthEdition.pdf

resulting in reduced program participation. Thus, the issues giving rise to this Petition for Modification have only just recently presented themselves, and this Petition for Modification could not have been presented within one year of the effective date of D.17-12-022. Accordingly, CSE respectfully requests leave under Rule 16.4(d) to file this Petition for Modification more than one year following the effective date of D.17-12-022.

III. SUMMARY OF RELIEF REQUESTED

As discussed in greater detail below, the SOMAH PA has found that the current SOMAH incentive levels and the method for the annual incentive step-down no longer reflect changes to actual market costs for solar installations on multifamily affordable housing, resulting in reduced program participation. To address this critical issue, CSE respectfully requests modification of D.17-12-022 to obtain authorization from the Commission to eliminate the current annual incentive step-down methodology and establish a differentiated incentive structure that: a) better reflects actual installed system costs, as reflected by program data; b) better reflects the economic incentives that encourage investment from property owners in resident-benefitting solar systems; and c) supports achievement of the program target of 40% of participating SOMAH projects being located in DACs (Tables 1-4). The proposed incentive levels maintain the current incentive differentials between projects claiming the Investment Tax Credit (ITC) and Low-Income Housing Tax Credit (LIHTC) and account for the decreasing ITC percentage from 2022 through 2024. In addition, CSE recognizes that the proposed Inflation Reduction Act of 2022, HR 5376, 117th Cong. (Inflation Reduction Act), announced by Senators Joe Manchin (D-WV) and Chuck Schumer (D-NY) on July 27, 2022, could extend the ITC for solar systems through 2034 and eliminate the phasedown of the tax credit. Accordingly, Table 4 indicates proposed incentive levels consistent with the extension of the 30% ITC and elimination of the phasedown through 2034 should the Inflation Reduction Act pass in its current form.

Table 1 Proposed SOMAH Incentive Rates – 2022 (ITC at 26%, LIHTC at 30%)

TAX CREDITS		$ per AC Watt Incentive (DAC)		$ per AC Watt Incentive (non-DAC)	
ITC	**LIHTC**	**Tenant**	**Common**	**Tenant**	**Common**
No	No	$4.00	$1.36	$3.50	$1.19
Yes	No	$2.96	$1.01	$2.59	$0.88
No	Yes	$2.80	$0.95	$2.45	$0.83
Yes	Yes	$2.07	$0.70	$1.81	$0.62

Table 2 Proposed SOMAH Incentive Rates – 2023 (ITC at 22%, LIHTC at 30%)

TAX CREDITS		$ per AC Watt Incentive (DAC)		$ per AC Watt Incentive (non-DAC)	
ITC	**LIHTC**	**Tenant**	**Common**	**Tenant**	**Common**
No	No	$4.00	$1.36	$3.50	$1.19
Yes	No	$3.12	$1.06	$2.73	$0.93
No	Yes	$2.80	$0.95	$2.45	$0.83
Yes	Yes	$2.18	$0.74	$1.91	$0.65

Table 3 Proposed SOMAH Incentive Rates – 2024 through End of Program (ITC at 10%, LIHTC at 30%)

TAX CREDITS		$ per AC Watt Incentive (DAC)		$ per AC Watt Incentive (non-DAC)	
ITC	**LIHTC**	**Tenant**	**Common**	**Tenant**	**Common**
No	No	$4.00	$1.36	$3.50	$1.19
Yes	No	$3.60	$1.22	$3.15	$1.07
No	Yes	$2.80	$0.95	$2.45	$0.83
Yes	Yes	$2.52	$0.86	$2.21	$0.75

Table 4 Proposed SOMAH Incentive Rates Should Inflation Reduction Act Pass in its Current Form – 2022 through End of Program (ITC at 30%, LIHTC at 30%)

TAX CREDITS		$ per AC Watt Incentive (DAC)		$ per AC Watt Incentive (non-DAC)	
ITC	**LIHTC**	**Tenant**	**Common**	**Tenant**	**Common**
No	No	$4.00	$1.36	$3.50	$1.19
Yes	No	$2.80	$0.95	$2.45	$0.87
No	Yes	$2.80	$0.95	$2.45	$0.87
Yes	Yes	$2.00	$0.68	$1.75	$0.65

This proposed incentive structure represents a significant increase from the current incentive levels (Table 5), which have resulted in application stagnation, and will allow for sufficient incentive levels to ensure sustained program interest and participation, thereby enabling the program to meet its overall target of installing at least 300 MW of generating capacity on qualified properties by 2030.

Table 5 Current SOMAH Incentive Rates[9]

TAX CREDITS		$ per AC Watt Incentive (DAC)	
ITC	**LIHTC**	**Tenant**	**Common**
No	No	$2.97	$1.02
Yes	No	$2.09	$0.74

[9] Importantly, given the SOMAH Program's use of the Expected Performance-Based Buydown (EPBB) methodology and energy efficiency requirements, these incentive rates represent theoretical maxima rather than actual paid incentive rates due to real project conditions. Incentive amounts are determined, in part, by the efficiencies of the hardware, along with a design factor that takes into account the geographic location and climate data, the tilt and azimuth of modules, and shading. Additionally, incentive amounts can be reduced further by SOMAH's Solar Sizing Tool, which reduces the incentive to account for potential cost-effective energy efficiency measures to reduce on-site consumption.

No	Yes	$2.09	$0.74
Yes	Yes	$1.49	$0.56

Additionally, to ensure the SOMAH Program can adapt to evolving market conditions and project cost data in a timely and efficient manner in order to maximize the program's effectiveness, CSE respectfully requests that the Commission authorize the SOMAH PA to propose future modifications to incentive levels as necessary and with consultation from Energy Division via Tier 2 Advice Letter.

IV. BACKGROUND

Assembly Bill (AB) 693 (Stats. 2015, Ch. 582) created the now-named SOMAH Program, funded at up to $100 million annually from the investor-owned utilities' (IOU) share of greenhouse gas (GHG) auction proceeds. AB 693 prescribed three elements that the Commission was to consider when designing the program's incentive structure. First, incentives should be aligned with the installed turn-key costs for solar photovoltaic (PV) systems in the affordable housing market. Next, other incentives or sources of funding, namely the federal investment tax credit (ITC) and the Low-Income Housing Tax Credit (LIHTC), must be accounted for to the extent feasible when developing the program's incentive structure. Finally, no project shall receive an incentive greater than 100% of the installed turn-key cost of the PV system.

D.17-12-022 implemented AB 693 and established the SOMAH Program's budget, incentive structure, and eligibility requirements, among other items. D.17-12-022 created a differentiated incentive structure, whereby the portion of the system offsetting tenant load receives a higher incentive than the portion designated to offset common area load. D.17-12-022 stated, "it is reasonable for the program to cover the full cost of tenant load",[10] and

[10] D.17-12-022 at 41.

"[i]ncentives for common areas should be enough to encourage installation of solar PV systems, while still ensuring that the property owner has sufficient investment in the project to motivate further actions to capture ongoing energy savings, for example through energy efficiency efforts."[11] Accordingly, the Commission adopted a base incentive of $3.20 per alternating current (AC) watt for tenant load and $1.10 per AC watt for common area load.

In designing the incentive structure for SOMAH, the Commission included one additional parameter beyond those legislatively prescribed. Specifically, the Commission employed an incentive step-down mechanism with the intent to annually reduce SOMAH incentives commensurate with market cost reduction trends under an implied assumption that costs would continue to decrease. Under the Commission's adopted incentive step-down methodology, a specified annual reduction is pegged to annual percent declines in residential solar PV system installed costs revealed through the National Renewable Energy Laboratory's (NREL) quarterly "U.S. Photovoltaic Prices and Cost Breakdowns" Technical Report, or 5% annually, whichever is less.[12] According to D.17-12-022, this approach "will ensure that annual incentive reductions reflect changes to actual market costs, while not declining too much in any given year,"[13] thus creating a market transformation element to the SOMAH Program not previously considered by AB 693. In compliance with this regulatory requirement, the PA followed the Decision to examine changes in residential cost benchmarks for the purposes of calculating the step-down percentage, even though NREL's data and analysis for the residential market segment corresponds to small-scale, single-family home installations, which have significantly different characteristics than multifamily installations.

While the SOMAH Program enjoyed high participation upon its launch in July 2019, with initial program budgets fully subscribed in Pacific Gas and Electric (PG&E), Southern

[11] *Id.* at 41-42.
[12] *Id.* at 43.
[13] *Id.*

California Edison (SCE), and San Diego Gas & Electric (SDG&E) service territories, participation has since declined precipitously. Figure 1 shows SOMAH applications throughout the life of the program, with small spikes occurring at the end of calendar years and just before previous incentive step-downs in July 2020 and October 2021.[14]

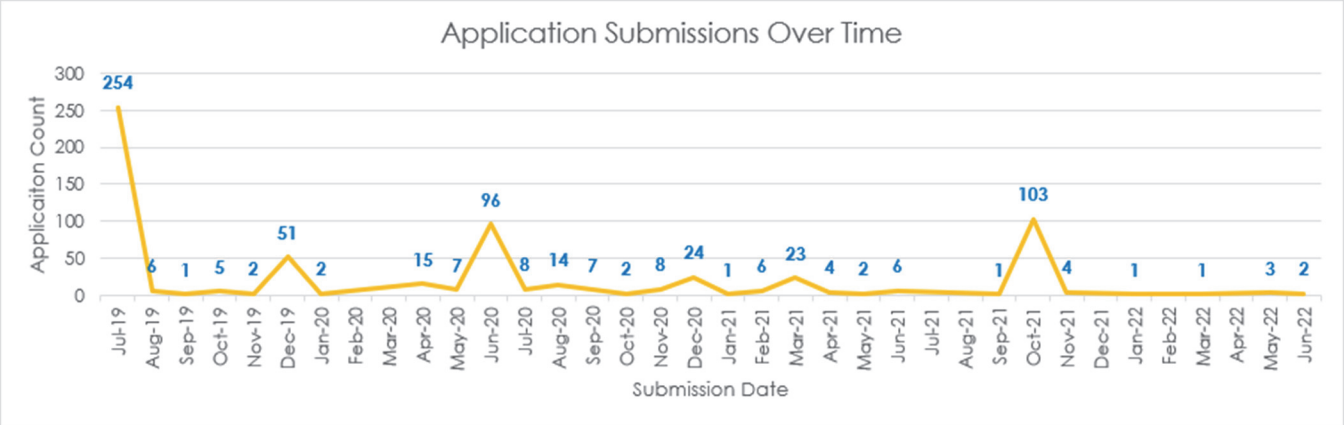

Figure 1 SOMAH Application Submissions since Program Opening

Analysis conducted by the SOMAH PA of SOMAH project cost data indicates that the average cost per watt has increased by 11.84% between projects submitted in 2019 ($3.77/watt, n=191) and those submitted in 2021 ($4.21/watt, n=92), while program incentive levels have decreased by approximately 7% over that same period. SOMAH incentives for completed projects cover just 52% of total reported project cost on average. Importantly, the program opened in 2019 with a tenant-offset incentive level of $3.20 per watt that covered approximately 85% of reported average system cost of $3.77 per watt. Nevertheless, the average tenant allocation per project was approximately 85% of total system production, far exceeding the minimum requirement of 51%. While this is not consistent with the intent of D.17-12-022 to cover the full cost of tenant load, the result indicates that the tenant incentive

[14] Figure 1 includes applications requesting upfront technical assistance. These represent interest from potential applicants but do not necessarily indicate a project that is ready to proceed with applying for a SOMAH incentive.

level does not necessarily need to offset system cost on a 1:1 basis to spur robust program participation and strong tenant benefits.

Additionally, the SOMAH PA conducted research through interviews with participating contractors, finding that incentive step-downs are exacerbating already reduced project margins brought on by inflation and supply chain issues, and that even existing applications are at risk of cancellation due to increasing project costs and degrading project financials.

Furthermore, the SOMAH Program has been challenged to attract higher-than-parity participation in DACs, given the lack of differentiation in incentives for projects in DACs. The current incentive structure and step-down methodology apply equally to all participating projects. Whereas approximately 32% of potentially eligible properties may be located in DACs, actual participation by properties in DACs has hovered steadily between 29% and 34% for most of the program's duration to-date. Given the PA's and stakeholders' commitment to ensuring the SOMAH Program serves DACs robustly, DACs' connection to the program's funding source, and the clear restorative justice implications of the program, a differentiated incentive for projects in DACs is needed to increase participation toward and potentially beyond the SOMAH Program's stated benchmark of at least 40% of participating projects in DACs by 2026.

V. RATIONALE FOR RELIEF REQUESTED

A. The Phase II Report, SOMAH Program data, and external market analyses all indicate that multifamily affordable housing solar PV costs are increasing.

In the absence of actual data on solar installation costs in the affordable housing markets, the NREL quarterly "U.S. Photovoltaic Prices and Cost Breakdowns" Technical Reports provide a useful, albeit imperfect, reference point to infer changes to actual market costs of SOMAH projects. In D.17-12-022, the Commission acknowledges, "solar system installation costs in affordable housing markets are not publicly known" and that the

incentives adopted in that decision, "will be re-evaluated when additional information on the costs of installation for multifamily affordable housing become available . . . We expect that review to be informed by data collected by the PA and others on the projects developed through the SOMAH Program".[15] Additionally, in adopting the current incentive step-down methodology, the Commission notes, "[t]his incentive step-down methodology will be reviewed and may be changed in the 2020 program evaluation, if appropriate based on further cost or market information."[16]

Actual cost data for SOMAH installations is now available. Analysis conducted by the SOMAH PA using cost data from SOMAH projects finds that average project costs have increased from $3.77 per watt for projects submitted in 2019 (n=191) to $4.21 per watt for projects submitted in 2021 (n=92), an 11.84% increase. While NREL's latest quarterly Technical Report indicates that the cost for *residential* solar systems (i.e., system sizes ranging from 3-11 AC kilowatts[17]) decreased 3.25% from Q1 2020 to Q1 2021,[18] inflation has increased from 4.2% in April 2021 to 9.1% in June 2022 and has been at or above 7.5% since January 2022.[19] Additionally, a recent report released by the Solar Energy Industries Association (SEIA) highlights data tracking performed by energy research and consultancy firm Wood Mackenzie that shows solar cost increases of as much as 18% in 2021, though some of these cost increases are attributable to supply chain issues that may be short-term in nature.[20]

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[15] D.17-12-002 at 39, 42-43.

[16] *Id.*

[17] Ramasamy Vignesh, David Feldman, Jal Desai, and Robert Margolis. 2021. U.S. Solar Photovoltaic System and Energy Storage Cost Benchmarks: Q1 2021. Golden, CO: National Renewable Energy Laboratory. NREL/TP-7A40-80694. https://www.nrel.gov/docs/fy22osti/80694.pdf

[18] *NREL U.S. Solar Photovoltaic System and Energy Storage Cost Benchmarks: Q1 2021, available at* https://www.nrel.gov/docs/fy22osti/80694.pdf

[19] https://www.statista.com/statistics/273418/unadjusted-monthly-inflation-rate-in-the-us/

[20] *Solar Energy Industries Association. Solar Market Insight Report 2021 Year in Review, available at* https://www.seia.org/research-resources/solar-market-insight-report-2021-year-review

Indeed, the SOMAH Phase II Report finds, "future SOMAH projects [are] likely to increase in cost".[21] In its discussion, Verdant notes that the initial SOMAH projects likely represent "low-hanging fruit" that are easier to complete or are part of a larger portfolio of affordable housing properties and lend themselves to "pooling" of applications. It stands to reason that the remaining SOMAH-eligible properties likely represent smaller, more remote, or more logistically challenging installations and will thus have higher customer acquisition or balance of system costs. This finding by the third-party evaluator is consistent with feedback the SOMAH PA has received from contractors and property owners through ongoing interviews and focus groups. Concerningly, since the start of 2022, the SOMAH PA has seen 22 applications withdraw, citing financial challenges as the primary reason for cancellation.

An important distinction between the SOMAH Program and the broader solar market is that the SOMAH Program must achieve an exceptionally high adoption rate among eligible properties to achieve its 300 MW goal. The SOMAH PA has identified approximately 3,400 SOMAH-eligible properties containing 272,000 tenant units. Based on the ratio of system size to tenant units in currently participating properties, the SOMAH PA estimates solar generation capacity of 543.7 MW for the identified universe of SOMAH eligible properties.[22] Thus, the SOMAH Program must aim to enroll approximately 55% of eligible properties to achieve the program's stated goal of 300 MW.

Another important distinction between the SOMAH Program and the broader solar market is that the SOMAH Program is tasked with the requirement that at least 51% of the systems installed must benefit tenants. One important aspect of this requirement to consider is the economics of return on investment (ROI). While the entire investment in the system is made by the property owner, a significant portion of the benefit goes to the tenants.

[21] SOMAH Phase II Report at 95.

[22] Note that this analysis does not entail a detailed engineering or siting review of the solar generation potential of all 3,400 eligible properties, as this would be cost prohibitive.

Consequently, the further the SOMAH Program continues to reduce incentives year after year for the tenant-benefitting portion of the system, the more it reduces the economic incentive for property owners to participate in the program because the ROI for 51% or more of the system will never be returned to them. While project cost data indicates that the tenant incentive level does not necessarily need to offset system cost 1:1, it is nevertheless crucial that the program is able to incentivize tenant-benefitting portions of the system at a rate that provides sufficient financial incentive for property owners to participate in the SOMAH Program, as the out-of-pocket cost for the system designed to benefit utility bills of others will diminish or erase the ROI for property owners. For the economics of the tiered incentive structure designed for the SOMAH Program to work properly, the tenant-benefitting portion must be as close to free for the property owner as possible.

In summary, the SOMAH Program aims to achieve an exceptionally high adoption rate among a historically hard-to-reach market segment for what is fundamentally a voluntary program and not a market transformation program. The third-party evaluation anticipates increasing project costs, and this finding is now borne out by a robust dataset of actual reported project costs. SOMAH system installation costs are increasing, and incentives must increase to spur continued participation and achieve program goals consistent with statute.

B. The SOMAH Program is not a market transformation program, and there are precedents from the MASH and LIWP-MF Programs for maintaining incentive levels.

The third-party evaluation conducted by Verdant included several findings and recommendations that support the relief requested in this Petition for Modification. In addition to anticipated cost increases discussed above, Verdant notes:

> **SOMAH is not a Market Transformation program**. Incentive step-downs are typically used for market transformation programs that strive to increase demand for a technology and consequently drive down costs for that technology and therefore the incentives required. The affordable housing properties that the SOMAH Program was developed to serve are reliant on program incentives

> to install solar, and there is no reason to believe that the need for incentives is going to change over the life of the program or after the program has ended. It is too soon to tell whether the balance of system and soft costs to install solar on multifamily affordable housing, which differ from those of typical residential or commercial installations, will decline over the timeframe of the SOMAH program. Given the likely trajectory of installed system costs for SOMAH projects and the significant barriers to multifamily low-income solar adoptions that have been presented in this report, the incentives are and will continue to be crucial.

Precedent exists for maintaining incentive levels and not employing a step-down for programs serving multifamily affordable housing properties. The California Solar Initiative (CSI) Multifamily Affordable Solar Housing (MASH) Program did not employ an incentive step-down during either MASH 1 or MASH 2 and maintained the same incentive levels throughout the duration of each program phase, despite a step-down being employed in the CSI General Market Program. The Low-Income Weatherization Program for Multifamily Properties (LIWP-MF) did have one initial incentive step-down at the beginning of the program but has since maintained the same solar PV incentive levels since early 2018. In addition, to better serve the needs of properties serving formerly homeless populations, in 2020, LIWP-MF returned its incentives to round 1 levels for these communities in order to provide more targeted support and encourage equitable program participation for unhoused populations.

C. SOMAH Program participation has halted despite over $405 million in available incentives.

While the SOMAH Program experienced a high volume of applications upon opening in 2019, participation has since declined steadily and is now essentially at a stand-still having addressed lower-hanging fruit and amid substantially different economic conditions. The program has received only one active Reservation Request since the latest incentive step-down in October 2021. While the program has also received six new Track A applications for upfront technical assistance, these represent interest in the program but do not necessarily

indicate that SOMAH incentive levels are high enough to make a project financially viable. Three of these Track A projects have since been cancelled due to ineligibility and lack of response and interest. As of August 5, 2022, there is over $405 million in incentive funds available. A lack of interest in the program cannot be attributed to a scarcity of funds and instead points to insufficient incentive levels to spur participation.

These unallocated funds represent a significant missed opportunity to provide economic relief to tens of thousands of multifamily affordable housing tenants who are currently experiencing increasing utility bills and energy costs and historically high levels of inflation. The Phase II Report found that a typical tenant of a SOMAH property enjoys first-year utility bill savings between $45.03 - $60.91 per month for non-CARE customers (a 74 – 88% savings) and savings between $32.60 - $40.47 per month for customers receiving the CARE discount (87 – 97% savings).[23] These tenant savings are almost certain to increase as electricity rates continue to rise. However, this direct relief from increasingly burdensome utility bills will never accrue to SOMAH's intended beneficiaries if the funds remain unused due to insufficient incentive levels to spur program participation and drive additional project installations to benefit tenants of multifamily affordable housing.

D. Increasing incentives to the proposed levels will spur participation, allow for the SOMAH Program to achieve the 300 MW minimum installation target, and support the programmatic benchmark of 40% of participating projects being located in DACs.

In the Phase II Report, Verdant presented a high-level calculation that found that the SOMAH Program could still achieve its 300 MW installation target under a scenario in which incentive levels returned to the 2019/20 level and projects maintained a 90/10 tenant/common area split.[24] The SOMAH PA has built upon Verdant's initial analysis and conducted a more robust modeling exercise to understand how different incentive levels are expected to impact:

[23] SOMAH Phase II Report at 123-124.

[24] *Id.* at 92-93

a) program participation; and b) the program's ability to achieve its target of 300 MW of installed generating capacity. The SOMAH PA's analysis incorporates additional important factors, including:

- The proportion of projects that claim the ITC (model set to approximately 70% to account for more host customer-owned systems), which receive a lower $/watt incentive level and thus a lower amount of program incentive funds expended per megawatt of installed capacity;
- The current tenant/common area split of 87/13 - this split still far exceeds the minimum program requirements of 51% of benefits accruing to tenants; however, it is slightly lower than the 90/10 split assumed by Verdant and thus results in lower incentive funds expenditure per megawatt of capacity, owing to the fact that the common area incentive rate is approximately one-third of the tenant area rate;
- Forecasted demand for program incentives using the Facebook Prophet model, a robust open-source algorithm built for forecasting time-series data, with actual program application data serving as a key input;
- The best available data on price elasticity of demand for solar PV systems, which indicates an elasticity of demand for solar of approximately -0.65, meaning that a 1% decrease in cost will result in a 0.65% increase in demand;[25] and
- A total program incentive budget of $839,000,000, which assumes that the program collects the entire $100 million annually through 2026 and accounts for the fact that cap-and-trade allowance auction proceeds in earlier years were not sufficient to fully fund the program.

[25] Gillingham K, and Tsvetanov T. 2019. Hurdles and Steps: Estimating demand for solar photovoltaics. *Quantitative Economics*. Vol. 10, Issue 1. pages 275-310.

Based on this analysis, the model developed by the SOMAH PA projects that the program will be able to achieve 300 MW of installed capacity at the incentive levels proposed in Tables 1-4. Upon program opening in 2019, the tenant incentive of $3.20 per watt covered approximately 85% of system cost per watt ($3.77 per watt). The proposed incentive levels are informed by this proportion, which adequately spurred robust participation upon program opening. The proposed non-DAC incentive level of $3.50 per watt covers approximately 83% of the 2021 average system cost of $4.21 per watt, while the DAC incentive level of $4.00 per watt covers approximately 95% of the 2021 system cost per watt. The availability of higher incentives for projects located in DACs, in tandem with enhanced marketing, education and outreach (ME&O) efforts already underway, should generate additional demand, encourage contractors to seek out additional projects in these areas, attract new contractors to participate in the program thereby increasing contractor diversity, increase the share of host customer-owned systems, and improve financial viability for projects already under consideration.

Achieving 300 MW of installed capacity is dependent upon certain model assumptions holding true – primarily that the tenant allocation remains at or below an average of 87% and that 70% of projects claim the ITC. The SOMAH PA will continue to monitor these factors closely and will refine this projection model as more data becomes available.

The SOMAH PA recognizes that increasing incentive levels for future SOMAH projects raises the question of equity for existing projects that applied under previous stepped-down incentive levels. While some projects may be financially viable at their current incentive level, it may also be true that a higher incentive level would allow for adjusted system sizing, such as the addition of capacity by building solar carports, which may not have been viable at lower incentive levels, and delivery of greater tenant benefits. Additionally, as previously mentioned, the SOMAH PA has seen 23 applications withdraw from the program this year, citing financial challenges as the primary reason for cancellation. The SOMAH PA therefore proposes that any projects that have already submitted a SOMAH application but have not yet

submitted their Proof of Project Milestone documentation may request the updated incentive level. The Proof of Project Milestone step is appropriate, as this is the stage of the SOMAH application where the applicant submits an executed contract specifying the system size and tenant/common area allocation, indicating that project financials are fully baked.

E. Authorizing the SOMAH PA to propose future modifications to incentive levels via Tier 2 Advice Letter with consultation with Energy Division provides a reasonable balance between program responsiveness to evolving market conditions and regulatory oversight.

Since the SOMAH Program launched in July 2019, we have collectively experienced a global pandemic, massive disruptions in domestic labor markets and global supply chains, and the highest levels of inflation seen in forty years. Thus, while the SOMAH PA believes the revisions to the SOMAH incentive step-down methodology requested herein will address the issues currently faced by the SOMAH Program and allow the program to advance and meet its 300 MW installation target, we recognize that the solar industry and multifamily affordable housing providers continue to face ever-changing market dynamics based on various economic and supply-chain factors. In order to enable the SOMAH Program to respond to market trends and to maximize the program's effectiveness, it may be necessary to seek further modifications to the incentive levels, for example, to lower incentives if demand is stronger than anticipated or increase incentives if demand is weaker than anticipated.

Accordingly, the SOMAH PA respectfully requests that the Commission authorize the SOMAH PA to propose any necessary future modifications to SOMAH Program incentive levels via Tier 2 Advice Letter, with consultation with the CPUC Energy Division. This will allow the SOMAH PA to adapt incentive levels more quickly to changing market conditions and maximize the SOMAH Program's effectiveness, rather than require the SOMAH PA to file a Petition for Modification to propose the necessary modifications followed by the Commission issuing a decision to approve the necessary modifications. Changes requested

via Tier 2 Advice Letter could include, but not be limited to, lowering incentives if demand is stronger than anticipated and increasing incentives if demand is weaker than anticipated.

To inform future proposed modifications, the SOMAH PA will continue its robust research to further understand market dynamics, including, but not limited to the following:

- Financial barriers to host customer-owned systems, including the need for credit enhancements, low or no-cost financing and bridge loans
- The impact of a potential ITC phaseout and increasing cost of capital on third party-owned and host customer-owned financing models
- Different system designs and site conditions that may impact system costs – for example, carport installations, roof conditions, etc.
- Barriers to participation for small- and medium-sized contractors
- The impact of modifications to the ITC, clean energy tax credits, and any potential additional credits available for solar installed on multifamily affordable housing that may result from passage of the Inflation Reduction Act of 2022.

Additionally, the SOMAH PA shall use the Incentive Rate Rubric in Table 6 below as a starting point, as well as the results of third-party evaluations to inform any proposed modifications.

Table 6 Incentive Rate Rubric

	Incentive Levels		
	Low	**Medium**	**High**
	$2.50 - 3.25/Watt	**$3.25 - 3.75/Watt**	**$3.75 - 4.50/Watt**
Program Participation	Program meets or exceeds annual MW goals for calendar year	Program meets annual MW goals for calendar year	Program drops below annual MW goal for calendar year by 50%

Total Project Costs	Project cost data for the past 12 months is between $2.75 - $3.25	Project cost data for the past 12 months is between $3.25 - $4.25	Project cost data for the past 12 months is greater than $4.25
SOMAH PA Market Research	SOMAH PA Market Research indicates the incentive level could be reduced	SOMAH PA Market Research indicates the incentive level could be reduced	SOMAH PA Market Research indicates the incentive level could be increased
External Market Data	External market data demonstrates projects costs have leveled off or decreased	External market data demonstrates projects costs have leveled off or decreased	External market data demonstrates projects costs have increased
Third-Party Program Evaluation	Third-Party Program Evaluation indicates the incentive level could be reduced	Third-Party Program Evaluation indicates the incentive level could be reduced	Third-Party Program Evaluation indicates the incentive level could be increased

Modifications would be proposed only after consultation with Energy Division to ensure sufficient regulatory oversight. Moreover, the Advice Letter process will provide interested parties the opportunity to respond to the SOMAH PA's proposed modifications, thus ensuring a sufficient level of transparency and deliberation.

Precedent exists for authorizing program administrators to seek future program modifications in this manner. The Commission authorized the California Solar Initiative-Thermal (CSI-Thermal) PAs to propose substantive program changes via Tier 2 Advice Letter after consultation with Energy Division[26] and similarly authorized the CSI-Thermal PAs to submit a Tier 2 Advice Letter to request changes to the incentive rate for the commercial solar

[26] D.15-01-035, *Decision Granting Petition for Modification of D.12-08-008 and D.13-08-004 regarding Changes to the California Solar Initiative Thermal Program*, January 29, 2015, pages 23-24, Conclusion of Law 14, and Appendix A, paragraph 7.

pool heating system subprogram of the CSI-Thermal Program.[27] The SOMAH PA maintains that a similar need exists here for the SOMAH Program to enable the program to react to market trends and maximize the program's effectiveness.

VI. CONCLUSION

For the reasons stated herein, CSE respectfully requests that the Commission grant this Petition for Modification and modify D.17-12-022 as set forth above, as expeditiously as possible. SOMAH incentive levels were set to step-down again in July 2022; however, on June 24, 2022, CSE requested an extension of time to comply with this requirement of D.17-12-022, citing low program participation and the fact that this Petition for Modification was under development. CSE was granted the extension by the Commission's Executive Director, Rachel Peterson, on June 30, 2022, with the expectation that this Petition for Modification would be filed before October 1, 2022. Moreover, and as stated previously, the SOMAH PA is beginning to see applications drop out of the program, citing financial infeasibility of the projects. In designing this approach ahead of seeking the requested relief, the SOMAH PA conducted robust stakeholder engagement and has engaged its Advisory Council, Job Training Organization Task Force, CBO Partners, contractors, and owners to help ensure these changes would be well-positioned to have the intended effect of increasing participation. By granting the relief requested, the Commission will authorize the SOMAH PA to eliminate the current annual incentive step-down methodology, increase incentives to those proposed in Tables 1-4, with higher incentives for eligible properties located in DACs. Additionally, authorization for the SOMAH PA to propose future modifications to incentive levels within the proposed incentive rate rubric and as necessary with consultation with Energy Division via Tier 2 Advice Letter will ensure the SOMAH Program can adapt to evolving market conditions and project cost data in a timely and efficient manner and maximize the program's effectiveness.

[27] D.13-08-004, *Decision to Incorporate Solar Pool Heating Systems into the California Solar Initiative – Thermal Program*, August 15, 2013, page 18.

Granting this Petition for Modification will allow for sufficient incentive levels to ensure sustained SOMAH Program participation, thereby enabling the program to meet its overall target of installing at least 300 MW of generating capacity on qualified properties by 2030 and support the programmatic benchmark of 40% of participating projects being located in DACs.

August 11, 2022

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ATTACHMENT A

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

DECLARATION OF JACQUELINE BERG

IN SUPPORT OF THE PETITION FOR MODIFICATION OF DECISION 17-12-022

I, Jacqueline Berg, declare as follows:

1. I am the Senior Manager for the Solar On Multifamily Affordable Housing (SOMAH) Program at Center for Sustainable Energy (CSE). As such, I have the responsibility for overseeing the management and operation of the SOMAH Program for CSE, which is a member of the Program Administrator (PA) Team for SOMAH. I have personal knowledge of the facts and representation herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

2. I provide this declaration in support of the Petition for Modification (PFM) on behalf of the SOMAH PA Team, comprised of CSE, GRID Alternatives (GRID), and the Association for Energy Affordability (AEA), as well as its subcontractors, including the California Housing Partnership (CHPC) and rotating community-based organizations, which seeks relief to specific SOMAH Program requirements as currently set forth in Decision (D.)17-12-022.

3. The PFM seeks the authority to eliminate the current annual incentive step-down methodology and increase incentives to those proposed in Tables 1-4, with higher incentives for eligible properties located in disadvantaged communities (DACs), and to authorize the SOMAH PA to propose future modifications to incentive levels within the proposed incentive rate rubric and as necessary with consultation with Energy Division via Tier 2 Advice Letter to ensure the SOMAH Program can adapt to evolving market conditions and project cost data in a timely and efficient manner.

4. The SOMAH PA Team was not able to file this PFM within one year of the effective date of D.17-12-022 because the SOMAH Program officially launched on July 1, 2019, and the initial 2020 SOMAH Program evaluation was conducted in two parts, with the final Phase I Report submitted on August 4, 2020, and the final Phase II Report submitted on October 13, 2021. The SOMAH Phase II Report included several key findings that support the need for the modifications requested via this PFM. Additionally, beginning in the fall of 2021, the SOMAH PA conducted a series of interviews and focus groups with property owners and contractors to better understand barriers to participation in the program, and the results of this research broadly support the findings in the Phase II Report, with several contractors stating that current incentive levels are not adequate to support recently submitted projects in the face of supply chain constraints and record inflation. Given these findings and results of additional research obtained in late 2021, the SOMAH PA now finds that the current incentive levels and the method for the annual incentive step-down no longer reflect changes to actual market costs for solar installations on multifamily affordable housing, resulting in reduced program participation.

5. The SOMAH PA Team believes the changes proposed to D.17-12-022 would allow for sufficient incentive levels to ensure sustained program participation, thereby enabling the SOMAH Program to meet its overall target of installing at least 300 MW of generating capacity on qualified properties by 2030 and support the programmatic benchmark of 40% of participating projects being located in DACs.

6. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on August 11, 2022, at San Diego, California

/s/ Jacqueline Berg
Jacqueline Berg